



Cromarod 309L

SMAW - (Stick) - MMA
Stainless Steel

Date: 2002-05-10
Revision: 20

Description:

Cromarod 309L is a rutile flux coated electrode which deposits a 23%Cr / 13%Ni austenitic stainless steel weld metal. The high alloy content and ferrite level enable the weld metal to tolerate dilution from mild and low alloy steels without hot cracking or brittle structures.

Applications:

- Dissimilar joints between stainless and mild or low alloy steels.
- Buffer layers on mild and low alloy steels prior to overlaying with Cromarod 308L or Cromarod 347.
- Interface runs in clad steel joints.
- Joining of clad steels and dissimilar joints between stainless and mild or low alloy steels.
- Welding of similar composition 309 type austenitic stainless steels.
- Joining ferritic-martensitic 410 and 430 type stainless steels.

Welding positions:



Coating type:

Rutile

Welding current:

DC +, AC 0CV > 39V

Ferrite content:

FN 9 (WRC-92)

Corrosion resistance

As Cromarod 309L is usually used for buffer layers and dissimilar joints, corrosion resistance is of less importance. Two layers on mild steel is about equivalent to 304L type material.

Scaling temperature:

Approx. 1000°C in air.

Redrying temperature:

350°C, 2h

Chemical composition, wt.%

	C	Si	Mn	P	S	Cr	Ni
Min			0,5			22,0	12,0
Typical	0,02	0,8	0,8	0,02	0,02	23,0	13,0
Max	0,030	0,90	2,0	0,030	0,025	25,0	14,0

	Mo	Cu	V	Nb
Min				
Typical	0,1			
Max	0,5	0,5	0,1	0,1

Mechanical properties

	Specified	Typical
Yield strength, Rp0.2%:	≥ 320 N/mm ²	470 N/mm ²
Tensile Strength, Rm:	≥ 520 N/mm ²	560 N/mm ²
Elongation, A5	≥ 30%	34%
Impact energy, CV:	-20°C • ≥ 29 J	-20°C • 48 J -60°C • 45 J

Classification:

EN 1600-97	E 23 12 L R 12
AWS A5.4-92	E 309L-17
BS 2926-84	23.12 L R
DIN 8556-86	E 23.12 L R 23
NF A81-343-79	EZ 23.12 L R 23

Approvals:

LR
DNV
UDT
BV
ABS
GL

Note

Core wire:
P ≤ 0.020%
S ≤ 0.015%
N ≤ 0.080%

Product data

Diam.mm	Length mm	Product code	Current A	Voltage V	Kg weld metal/kg electrodes	No. of electrodes/kg weld metal	Kg weld metal/hour arc time	Burn-off time/electrode (sec.)
2,50	300	74392500	40-80	27	0,67	83	0,9	42
3,25	350	74393200	80-120	28	0,67	42	1,4	53
4,00	350	74394000	100-160	29	0,67	28	1,9	59
4,00	450	74394045	100-160	29	0,67	21	1,9	75
5,00	450	74395000	170-230	30	0,65	14	2,8	86